

NTAG Future Windows OS Directions Update

7 December 2001

Eric L. Krum
NTAG Chairperson
781.271.5144
krume@mitre.org

Purpose

- To highlight technologies related to Active Directory and future Windows operating system functions the AOG should be aware of.
 - Upon request NTAG will come back with detailed information and recommendations on specific to one or more subjects presented today

Outline

- Future Directions of Windows OSs
- Future Direction Considerations

Future Directions of Windows OSs

- Windows XP released in October
 - Home
 - Professional, 32 & 64 bit versions
- Fast User Switching (Terminal services)
 - Multi users running simultaneously
 - Remote logon
 - Remote administration
- PC Tablet 3rd Qtr 2002
 - Windows XP with Ink object
 - 2.5 pounds
 - Wireless LAN, 802.11b

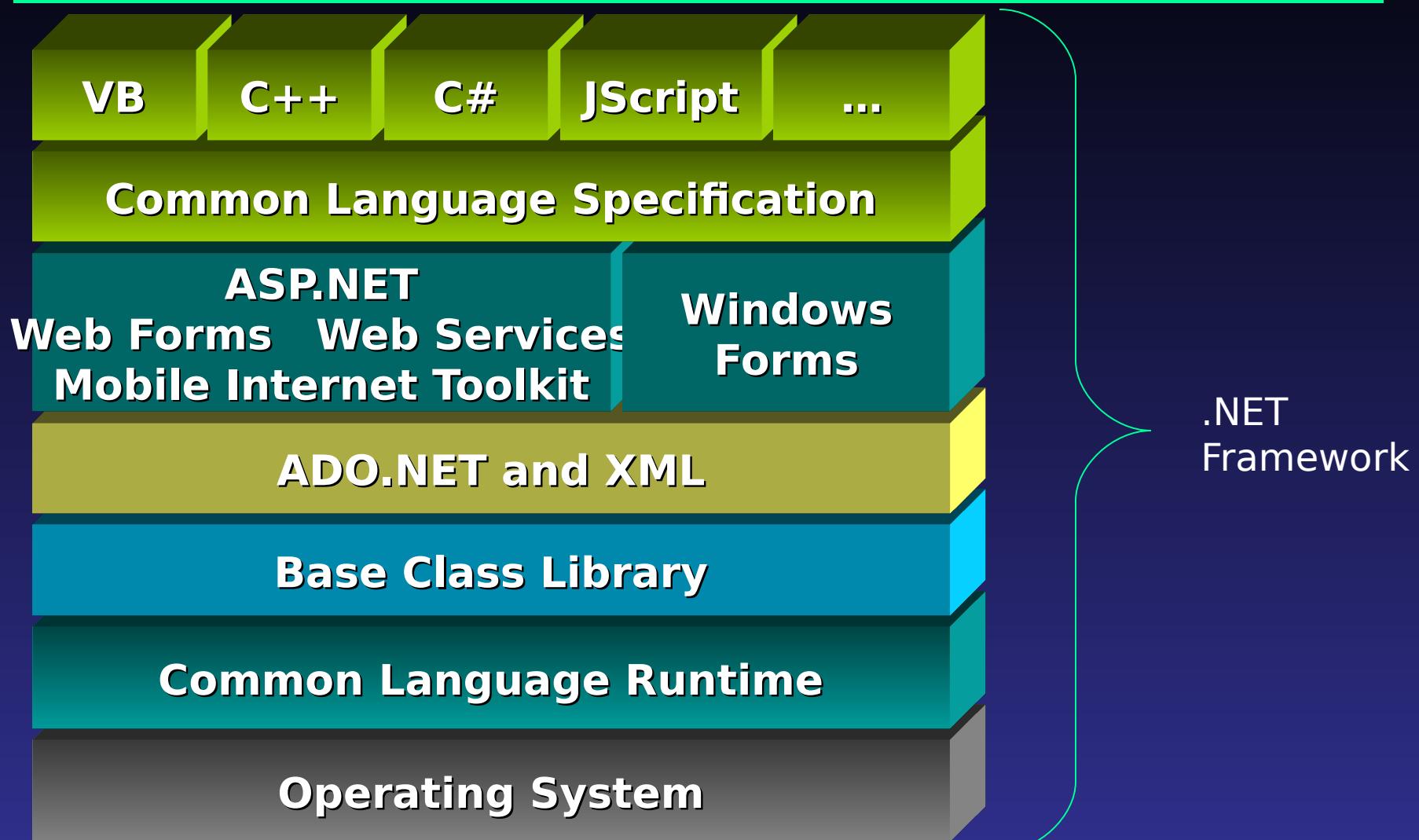


Future Directions of Windows OSs

(2)

- Windows .NET Servers
 - Due in 2002
 - 32 & 64 bit versions
 - UDDI (Universal Description, Discovery and Integration) service
- .NET Framework
 - Scheduled March 2002 release
 - New subsystem available as a Merge Module for Windows 98, NT, 2000, and XP
 - Extensive integrated security features

Future Directions of Windows OSs (3)



Future Directions of Windows OSs (4)

Languages scheduled to be part of Common Language Runtime

- APL
- C++
- C#
- COBOL
- Eiffel
- Fortran
- Haskell
- Java
- Jscript
- ML
- Pascal
- Perl
- RPG
- Python
- Scheme
- Smalltalk
- Visual Basic

Future Directions of Windows OSs

(5)

- Can use the .NET Framework to develop the following types of applications and services:
 - Console applications
 - Scripted or hosted applications
 - Windows GUI applications (Windows Forms)
 - Windows NT/2000/XP Windows services
 - ASP.NET applications
 - Web Services

Future Directions of Windows OSs

(6)

- Can deploy and upgrade native executable segments via a web site
- Assembly is the unit of deployment
 - One or more files, independent of packaging
 - Self-describing via manifest
 - Zero impact installation
 - Side by side execution
- Global Assemble Cache (GAC) for shared assemblies

Future Directions of Windows OSs

(7)

- Zero impact install for files, still need MSI for:
 - Inserting assemblies into GAC
 - Inserting icons and shortcuts on desktop or menu
 - Installing services
- Code built into assemblies is normally called managed code

Future Directions of Windows OSs

(8)

- Assembly is the security boundary
 - Assemblies are granted permissions
 - Methods in assemblies can demand minimum permission set
 - Security policy stored in XML file, can be set per:
 - Enterprise
 - Machine
 - Segment
 - Based on evidence

Future Directions of Windows OSs

(9)

- Evidence is any info about the assembly
- Evidence is the input to policy
 - Hash hash of the assembly
 - Publisher AuthentiCode® signer
 - StrongName public key+name+version
 - Site Web site of code origin
 - Url URL of code origin
 - Zone zone (IE) of code origin
 - ...*Extensible for new kinds of evidence...*

Future Directions of Windows OSs (10)

- .NET Alerts
- .NET ApplicationSettings
- .NET Categories
- .NET Calendar
- .NET Contacts
- .NET Devices
- .NET Documents
- .NET FavoriteWebSites
- .NET Inbox
- .NET Lists
- .NET Location
- .NET Presence
- .NET Profile
- .NET Services
- .NET Wallet



- Version 1 Web Services due late 2002
- Services offered for purchase 2003

Future Directions of Windows OSs

(11)

- Web services being designed for federation with non Windows platforms
 - UDDI (Universal Description, Discovery and Integration)
 - SOAP (Simple Object Access Protocol)
 - WSDL (Web Services Description Language)
 - XML (Extensible Markup Language)
- Web services client is responsible for being able to handle blob/object inside XML

Future Directions of Windows OSs

(12)

- Security for federation of web services based on Kerberos v5 (IETF RFC 1510)
 - Trusts between Kerberos realms
- Microsoft .NET My Services Specification
- Web Services Toolkit
- Visual Studio .NET
- Visual Studio Smart Devices Extensions
- SOAP Toolkit
- Alerts SDK

Future Direction Considerations

- Windows XP Considerations
 - Segments must be capable of running multiple instances simultaneously
 - Use of Tablet PC in COE
- Framework Considerations
 - Plan security policy up front
 - What levels of trust are important?
 - How is that trust conferred? (digital-signature)
 - Standard policy template for
 - Enterprise
 - Machine
 - Segment

Future Direction Considerations

(2)

- Framework Considerations (con't)
 - I&RTS guidance on:
 - .NET Framework development
 - Assembly development and deployment
 - Security configurations and policy
 - Framework merge module in kernel installation MSI package
- Kerberos v5 as authentication service
- Web services interoperability
- Interoperation of Java and J2EE code that is managed (assemblies) and unmanaged